



Instruction Manual book

ARROW 3D



SPECIFICATION

- ☐ Wingspan : 1,290mm 51 in.
- ☐ Length : 1,190mm 46.85in.
- ☐ Weight : 0.85kg 1.87Lbs.
- ☐ Parts listing required (not included) .
- ☐ Battery: 3 CELLS-LI-POY-11.1V-2000 mA.h.
- ☐ Electric motor :AXI 2808/24.
- ☐ Radio : 04 channels.
- ☐ Servo : 05 servos.
- ☐ Propeller : 11x 3.8.
- ☐ Speed control : 30A.

Made in Vietnam.

This instruction manual is designed to help you build a great flying aeroplane. Please read this manual thoroughly before starting assembly of your **ARROW 3D**. Use the parts listing below to identify all parts.

WARNING.

Please be aware that this aeroplane is not a toy and if assembled or used incorrectly it is capable of causing injury to people or property. WHEN YOU FLY THIS AEROPLANE YOU ASSUME ALL RISK & RESPONSIBILITY.

If you are inexperienced with basic R/C flight we strongly recommend you contact your R/C supplier and join your local R/C Model Flying Club. R/C Model Flying Clubs offer a variety of training procedures designed to help the new pilot on his way to successful R/C flight. They will also be able to advise on any insurance and safety regulations that may apply.

TOOLS & SUPPLIES NEEDED.

-  Thick cyanoacrylate glue.
-  30 minute epoxy.
-  5 minute epoxy.
-  Hand or electric drill.
-  Assorted drill bits.
-  Modelling knife.
-  Straight edge ruler.
-  2mm ball driver.
-  Phillips head screwdriver.
-  220 grit sandpaper.
-  90° square or builder's triangle.
-  Wire cutters.
-  Masking tape & T-pins.
-  Thread-lock.
-  Paper towels.

Some more parts.

HARDWARE PACK

COWLING.

Landing gear.....

SUGGESTION.

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

PARTS LISTING.

FUSELAGE ASSEMBLY

-  (1) Fuselage.

WING ASSEMBLY

-  (1) Right wing half with pre-installed aileron.
-  (1) Left wing half with pre-installed aileron.

Tail section assembly

-  (1) Vertical stabilizer with pre-installed rudder.
-  (1) Horizontal stabilizer with pre-installed elevator halves.

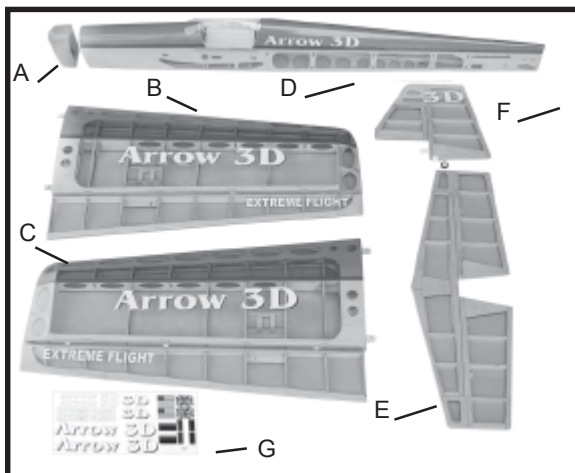
NOTE.

Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. **ARROW 3D** ARF is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.

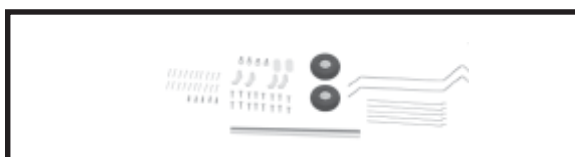
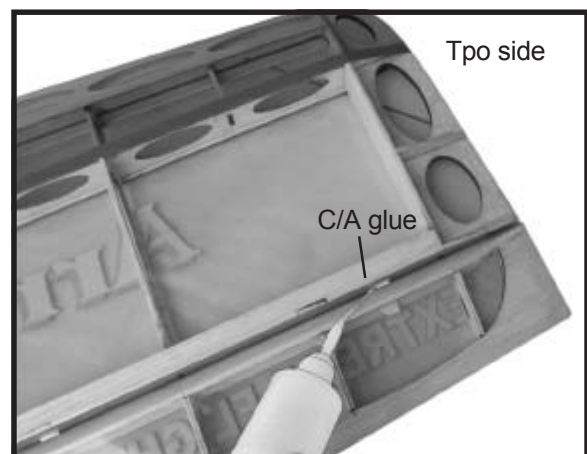
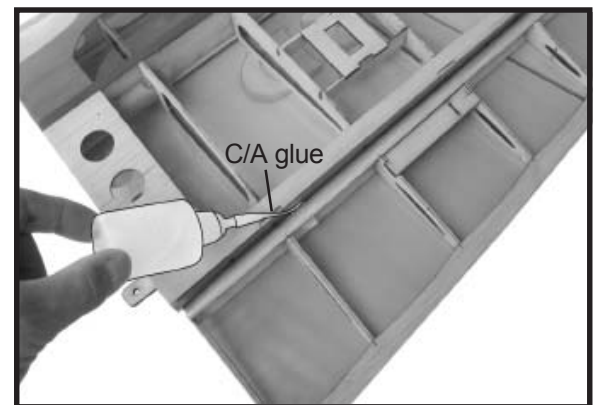
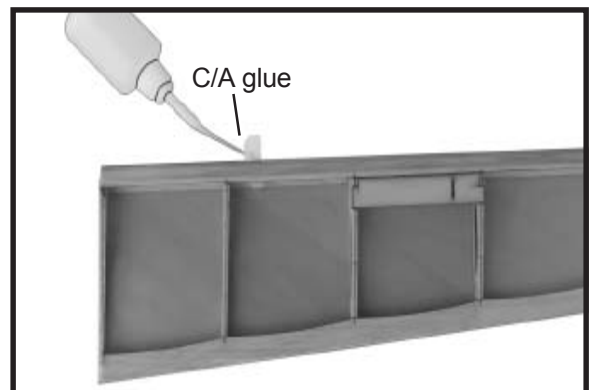
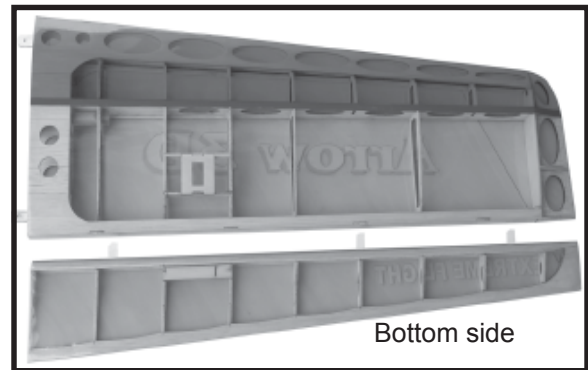
The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.

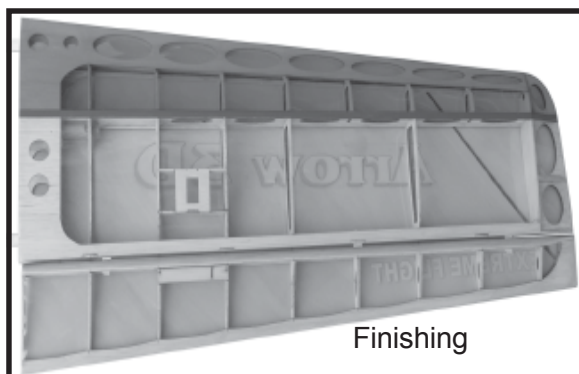
SAFETY PRECAUTION.

- + This is not a toy
- + Be sure that no other flyers are using your radio frequency.
- + The glow plug clip must be securely attached to the glow plug.
- + Do not flip the propeller with your fingers.
- + Keep loose clothing and wires away from the propeller.
- + Do not start the engine if people are near.
Do not stand in line with the side of the propeller.
- + Make engine adjustments from behind the propeller only. Do not reach around the spinning propeller.

REPLACEMENT LARGE PARTS

- A. Cowling.
- B. Right wing panel.
- C. Left wing panel.
- D. Fuselage.
- E. Horizon stabilizer.
- F. Vertical stabilizer.
- G. Decal sheet.

REPLACEMENT SMALL PARTS**INSTALLING THE AILERON SERVOS.**



Finishing

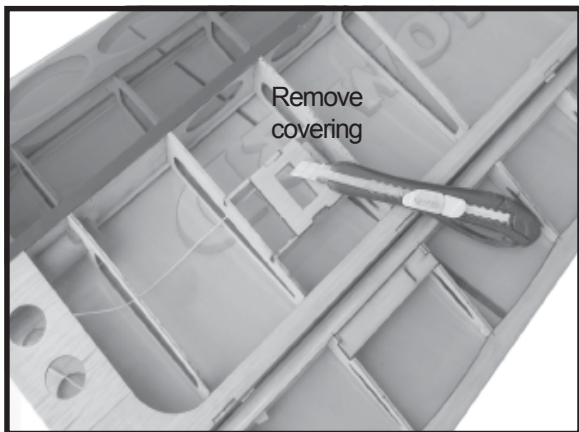
1) Install the rubber grommets and brass eyelets onto the aileron servo.

2) Install the metal connector onto servo arm .



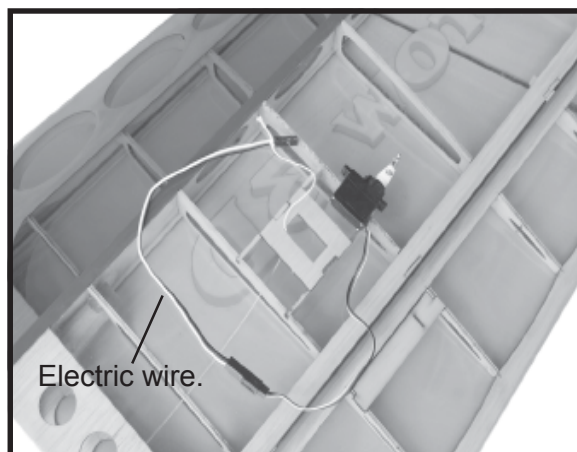
3) Turn the wing panel right side up.

Using a modeling knife, remove the covering at servo tray.



4) Using the thread as a guide and using masking tape, tape the servo lead to the end of the thread: carefully pull the thread out. When you have pulled the servo lead out, remove the masking tape and the servo lead from the thread.

5) Drill 1,6mm pilot holes through the block of wood for each of the four mounting screws provided with the servo.

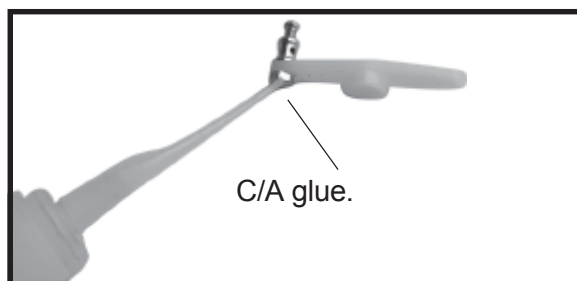
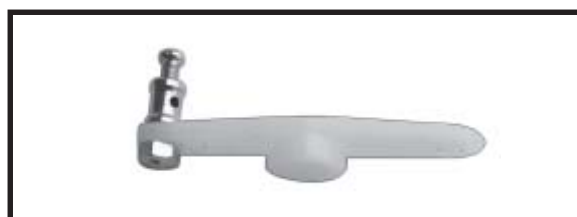


Electric wire.



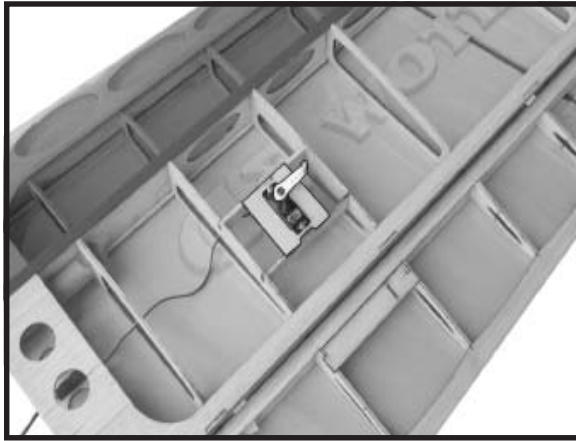
Micro control connector.

5) Attach the micro control connector to the servo arms. Be sure to use the lock tie but it could free rotation.



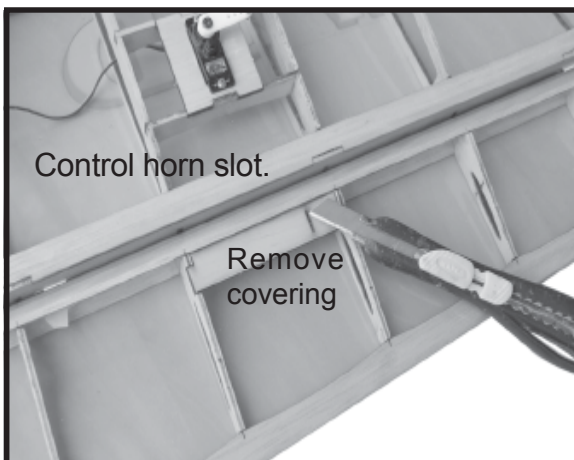
C/A glue.



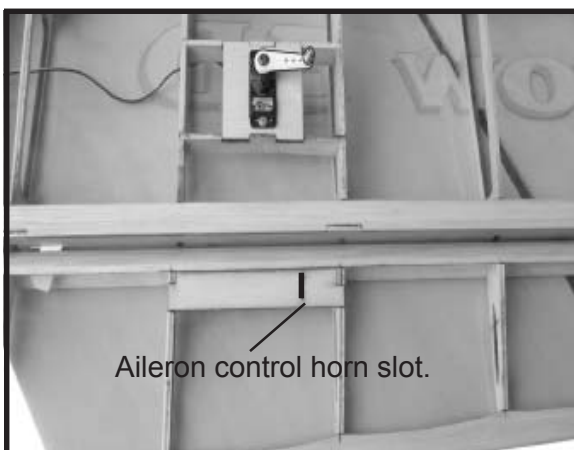


Repeat the procedure for the other wing half.

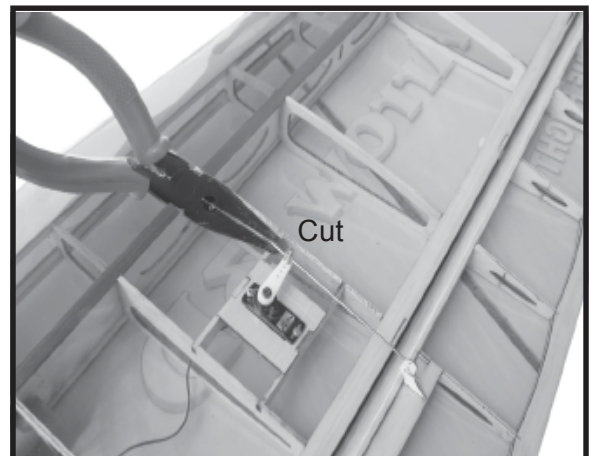
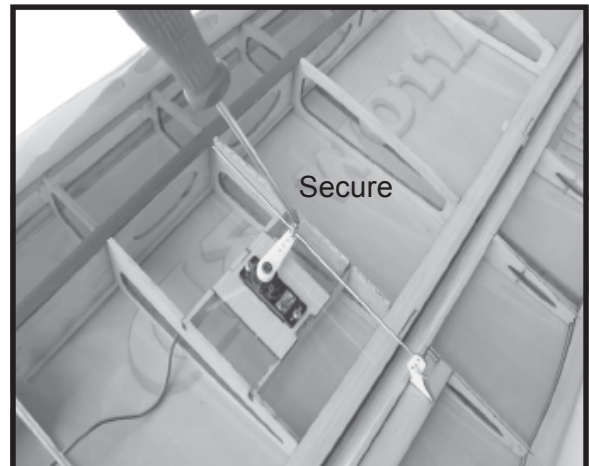
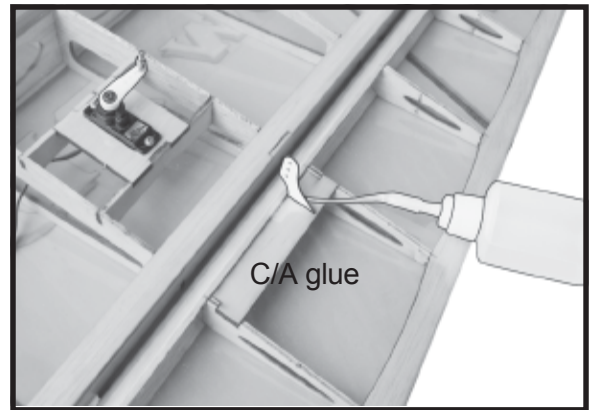
INSTALLING THE AILERON CONTROL HORN.

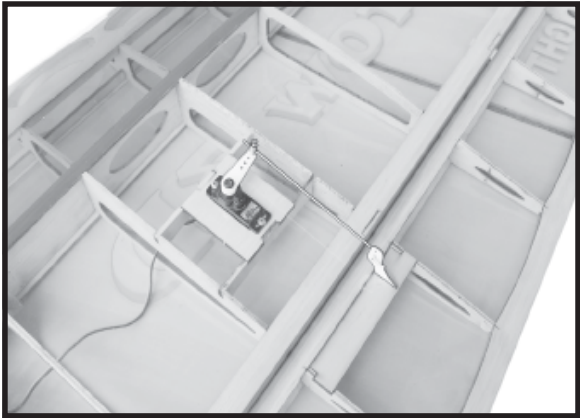


Remove covering on to the aileron control horn pre-cut slot-mounting.



Insert aileron control horn to the aileron.

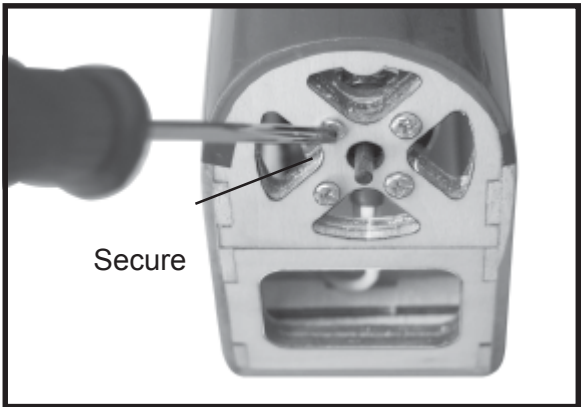
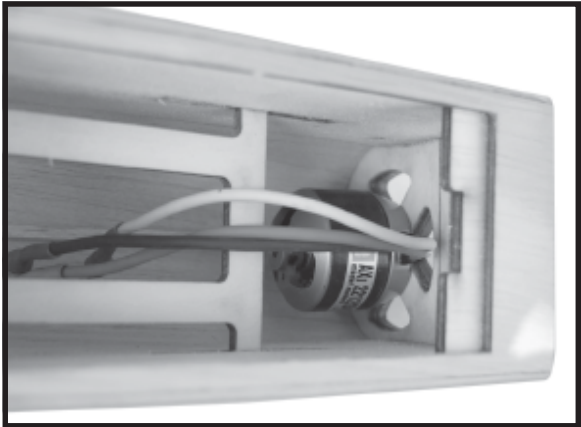
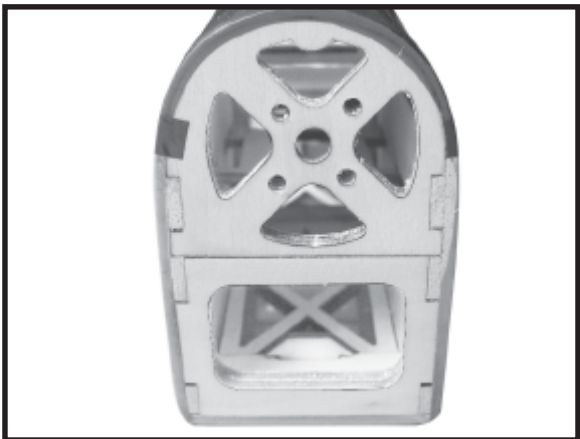
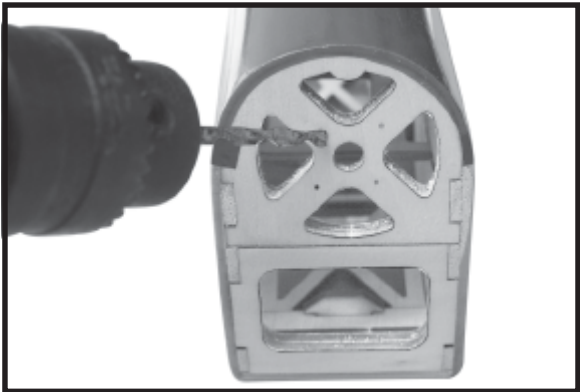




Repeat the procedure for the other wing half.

INSTALLING ELECTRIC MOTOR.

See pictures below:



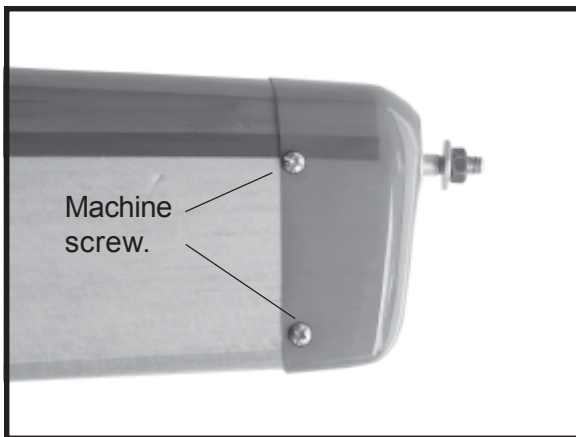
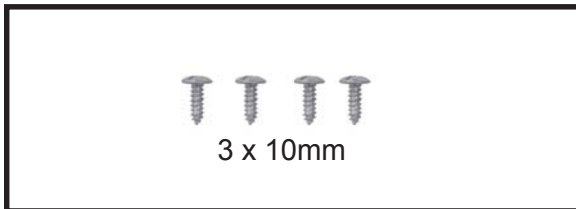
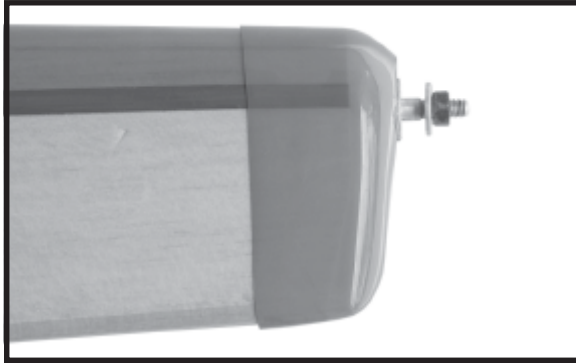
COWLING.

- 1) Slide the cowl over the motor and line up the back edge of the cowl with the marks you made on the fuselage.



❑ 2) While keeping the back edge of the cowl flush with the marks, align the front of the cowl with the crankshaft of the motor. The front of the cowl should be positioned so the crankshaft is in **nearly** the middle of the cowl opening. Hold the cowl firmly in place using pieces of masking tape.

❑ 3) Slide the cowl back over the motor.



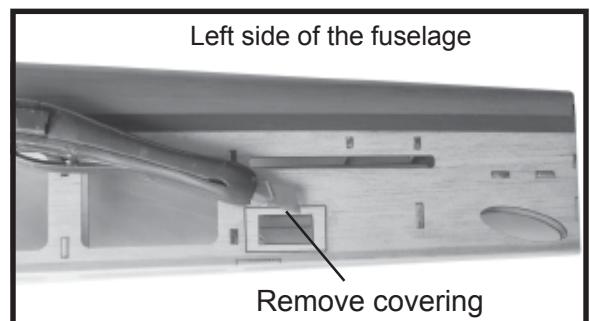
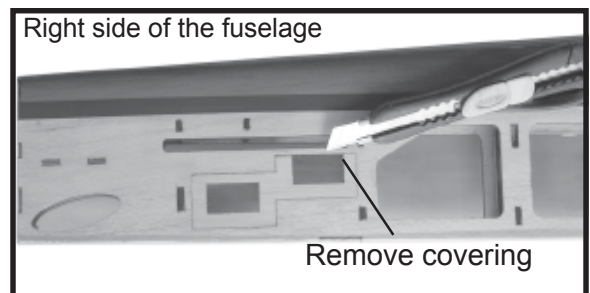
SERVO INSTALLATION.



📁 1) Install the rubber grommets and brass eyelets onto the aileron servo.

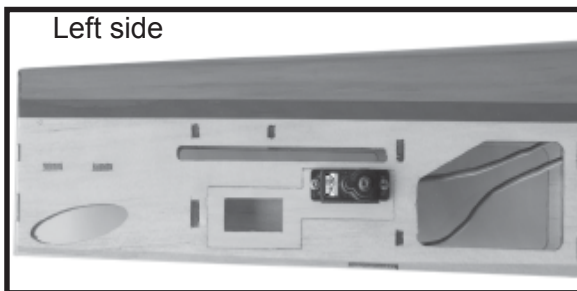
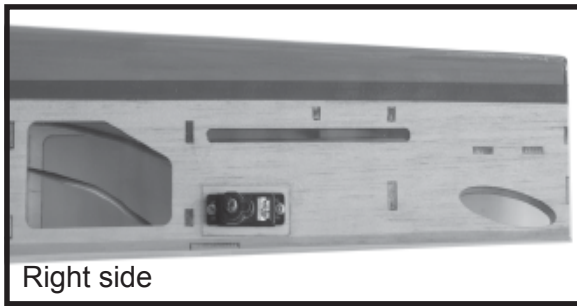
📁 2) Install the metal connector onto servo arm .

📁 3) Using a modeling knife, remove the covering at servo tray.



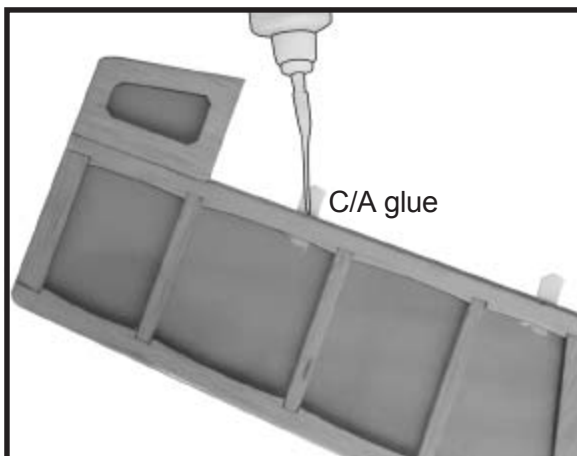
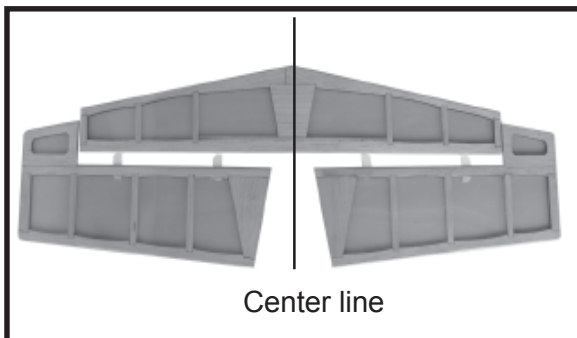
📁 4) Using the thread as a guide and using masking tape, tape the servo lead to the end of the thread: carefully pull the thread out. When you have pulled the servo lead out, remove the masking tape and the servo lead from the thread.

5) Drill 1,6mm pilot holes through the block of wood for each of the four mounting screws provided with the servo.

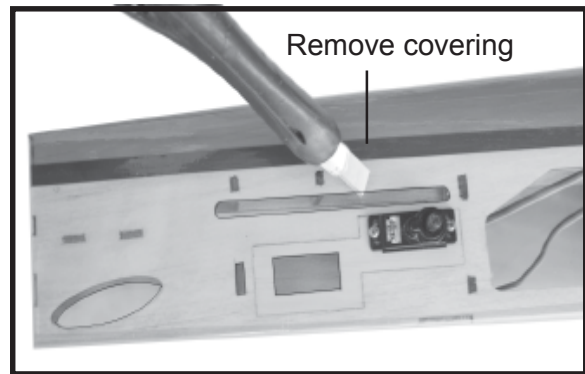


Repeat the procedure for the other servo.

INSTALLING ELEVATOR.

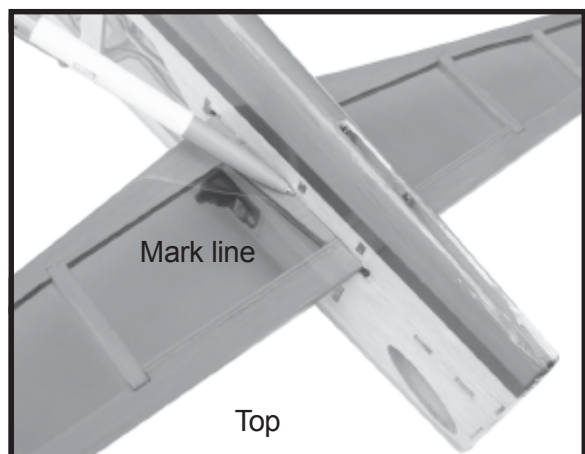


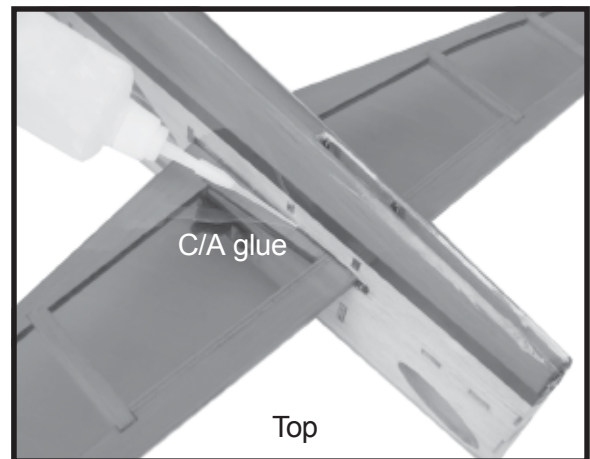
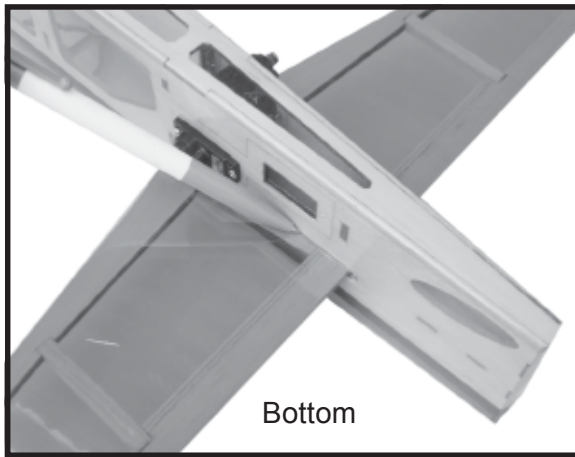
1) Using a modeling knife, remove the covering at fuselage slot.



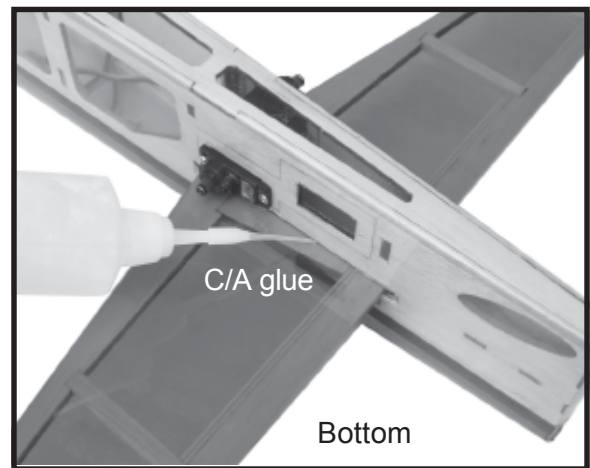
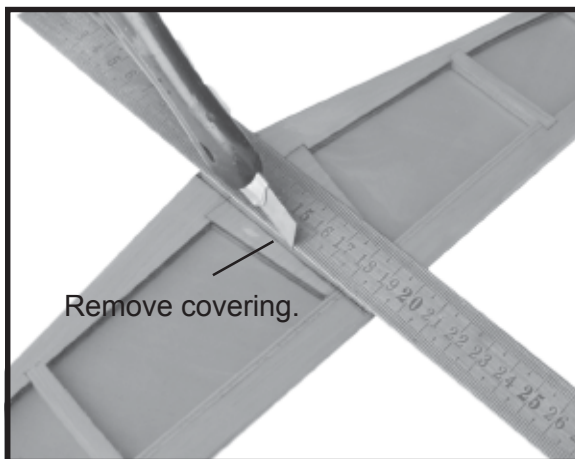
2) Using a ruler and a pen, locate the centerline of the horizontal stabilizer, at the trailing edge and place a mark. Use a triangle and extend this mark, from back to front, across the top of the stabilizer. Also extend this mark down the back of the trailing edge of the stabilizer.

3) Slide the horizontal fin without elevator into place in the pre-cut slot in the rear of the fuselage.



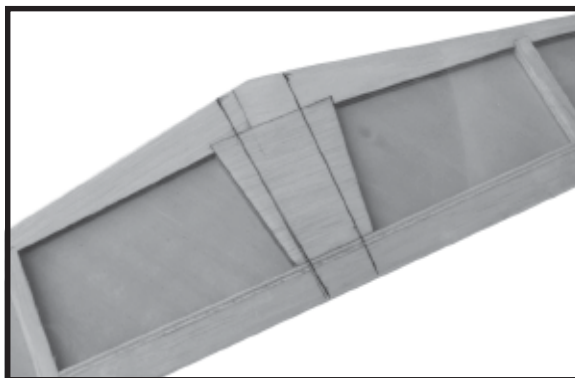
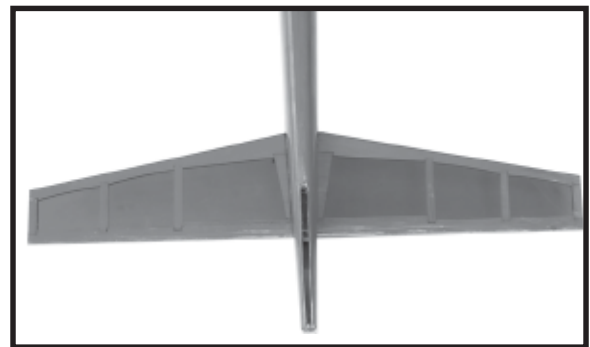


- 4) With the stabilizer held firmly in place, use a pen and draw lines onto the stabilizer where it and the fuselage sides meet. Do this on both the right and left sides and top and bottom of the stabilizer.



- 5) Remove the stabilizer. Using the lines you just drew as a guide, carefully remove the covering from between them using a modeling knife.

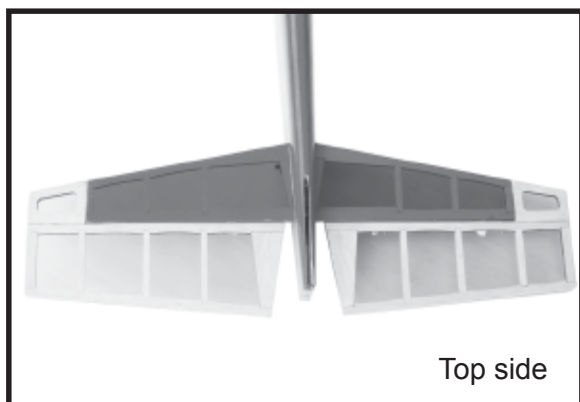
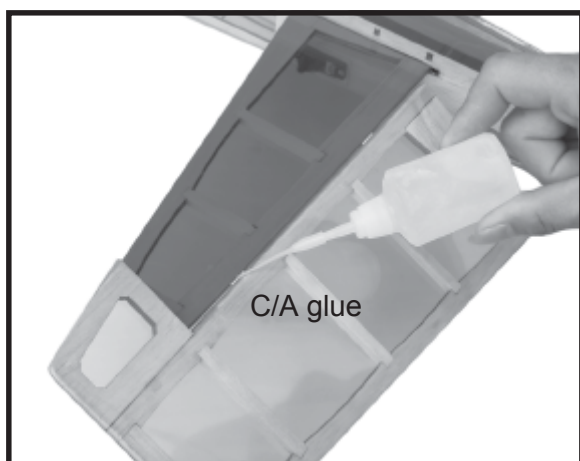
⚠ When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.



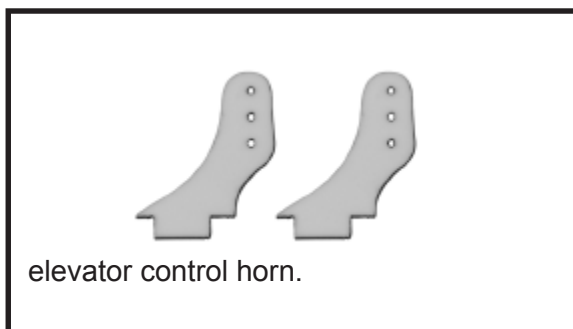
- 6) Slide the horizontal fin into place in the pre-cut slot in the rear of the fuselage again.



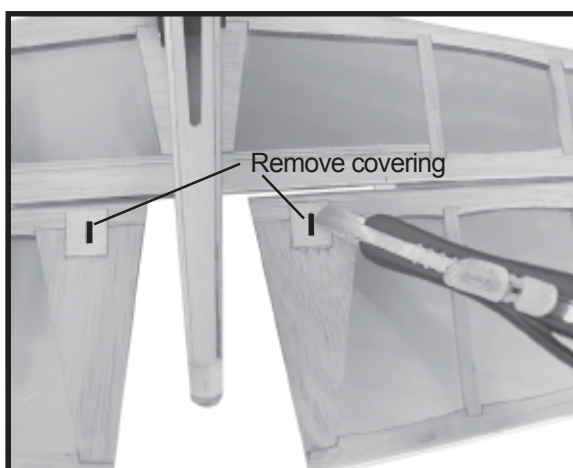
□ 7) When you are sure that everything is aligned correctly, mix up a generous amount of Flash 30 Minute Epoxy. Apply a thin layer to the top and bottom of the stabilizer mounting platform sides in the fuselage. Slide the stabilizer in place and realign. Double check all of your measurements once more before the epoxy cures. Hold the stabilizer in place with T-pins or masking tape and remove any excess epoxy using a paper towel and rubbing alcohol.



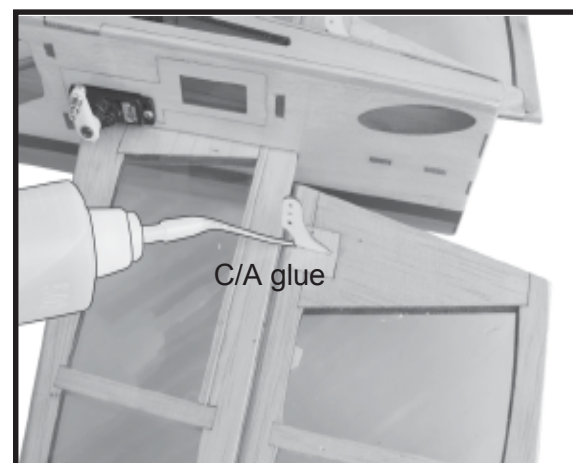
CONTROL HORN INSTALLATION.



See pictures below:

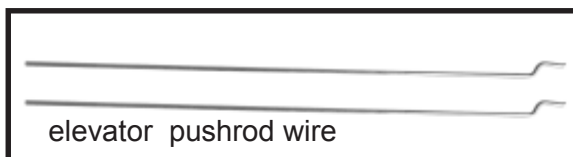


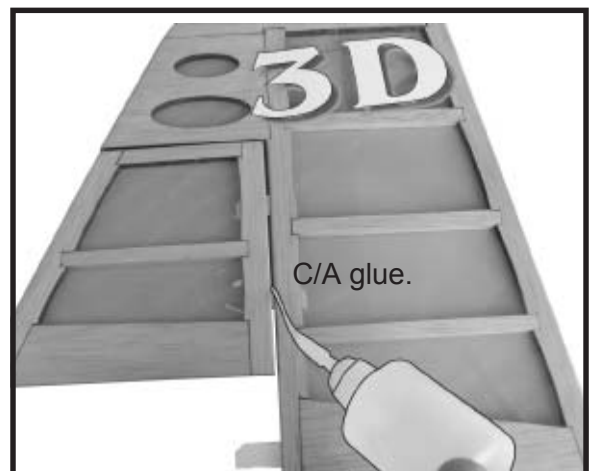
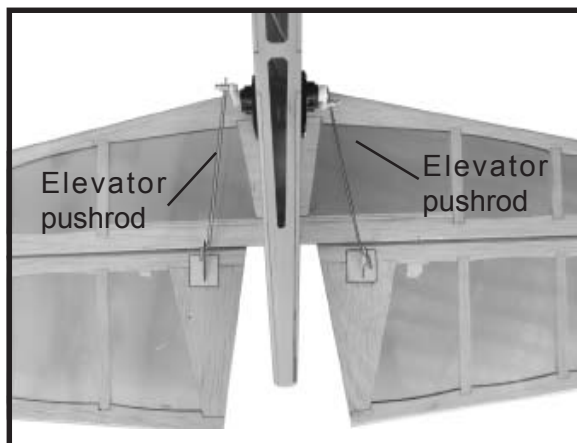
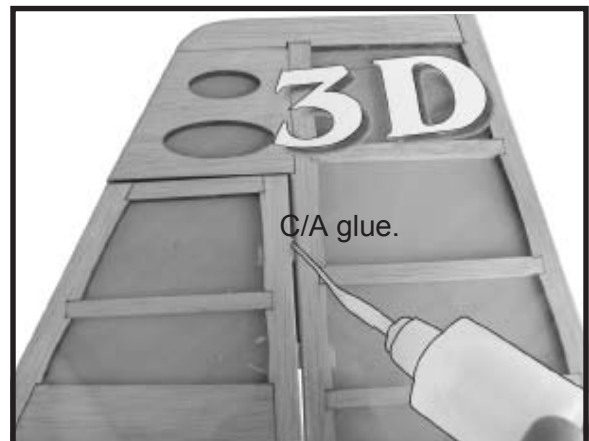
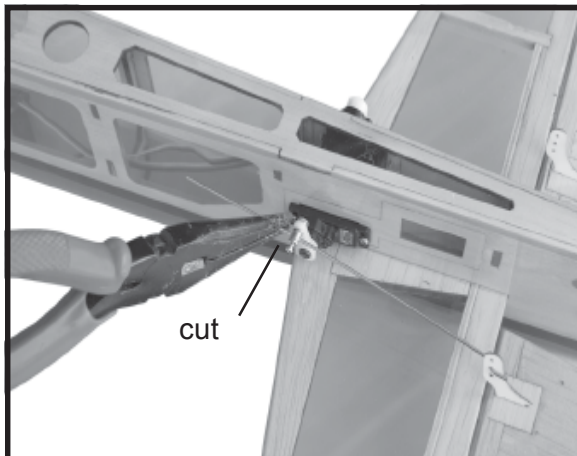
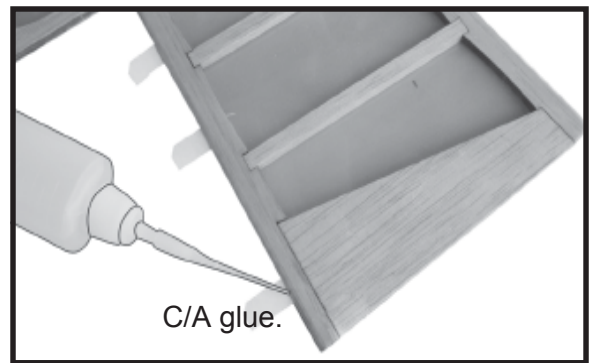
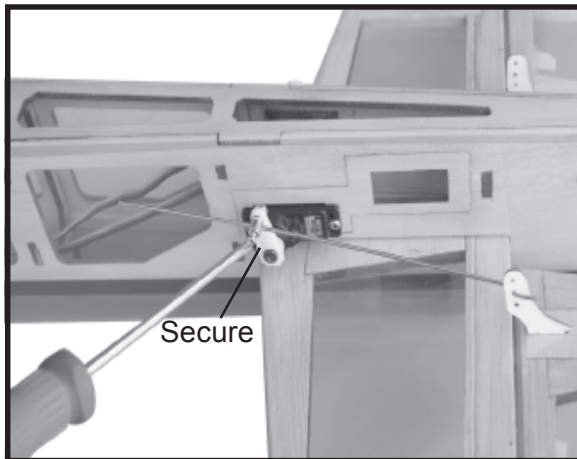
Remove covering on to the aileron control horn pre-cut slot-mounting.



INSTALLING THE ELEVATOR PUSHROD.

Pushrod install as same as method of aileron wing. See pictures below:

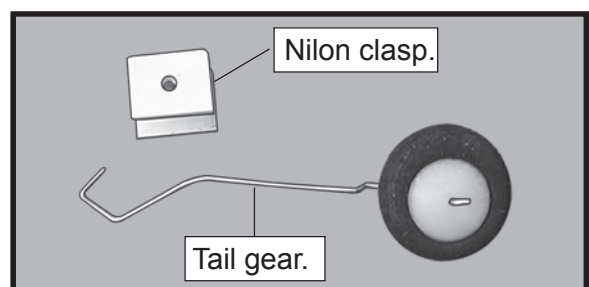
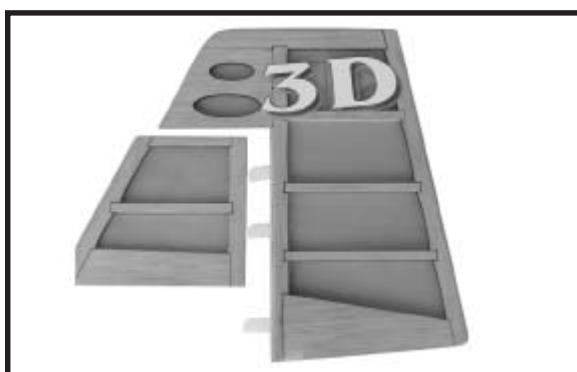




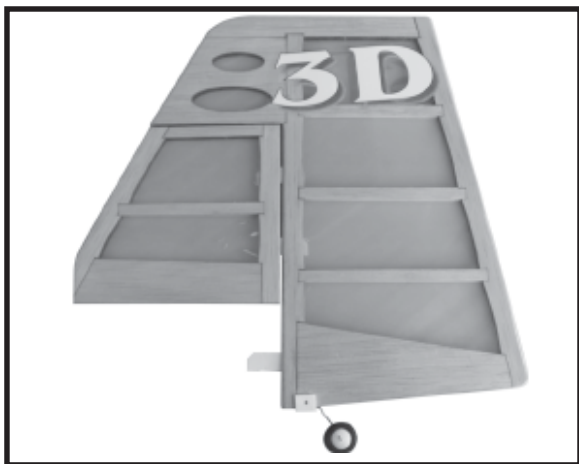
INSTALLING RUDDER.

MOUNTING THE TAIL WHEEL BRACKET.

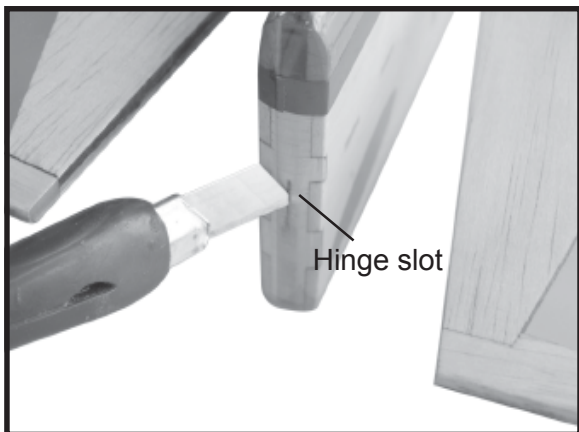
See pictures below:



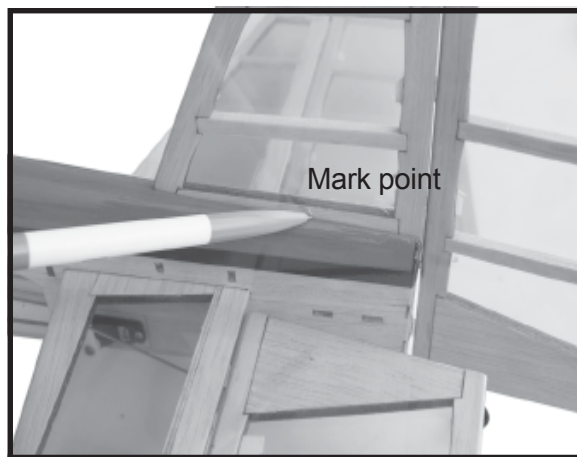
Made the slot from the bottom of the rudder and install the tail gear.



1. Using a modeling knife, remove the covering from over the precut hinge slot cut into the lower rear portion of the fuselage. This slot accepts the lower rudder hinge.



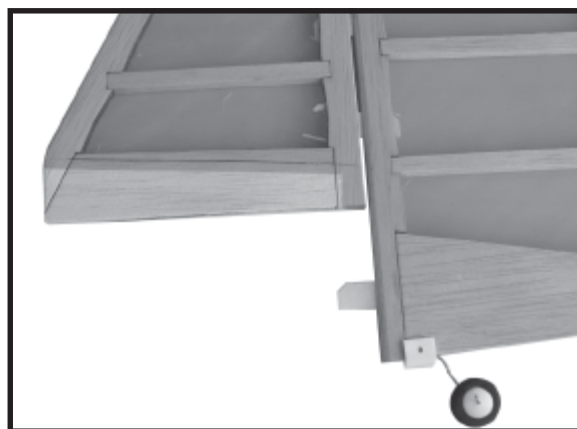
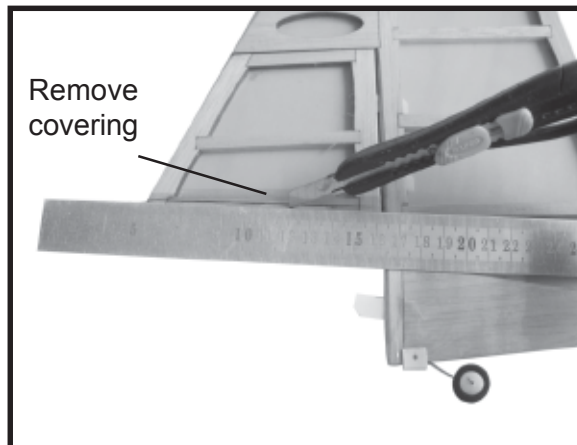
2. Slide the vertical stabilizer into the slot in the top of the fuselage. The rear edge of the stabilizer should be flush with the rear edge of the fuselage and the lower rudder hinge should engage the precut hinge slot in the lower fuselage. The bottom edge of the stabilizer should also be firmly pushed against the top of the horizontal stabilizer.



3. While holding the vertical stabilizer firmly in place, use a pen and draw a line on each side of the vertical stabilizer where it meets the top of the fuselage.

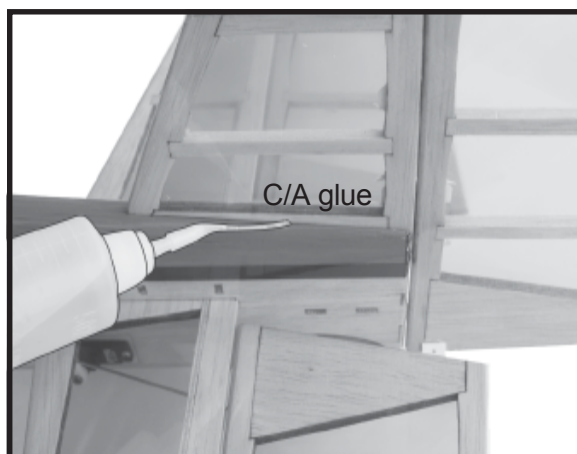
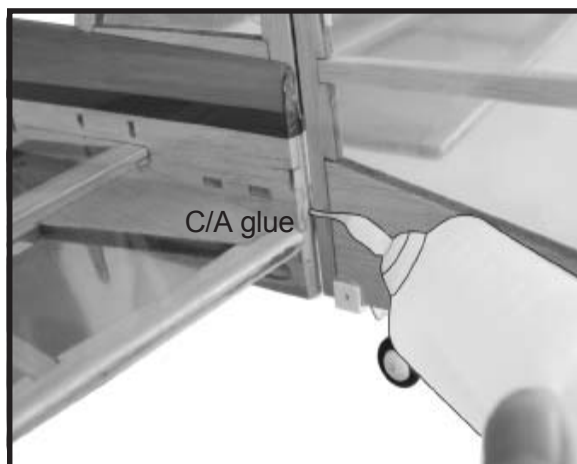
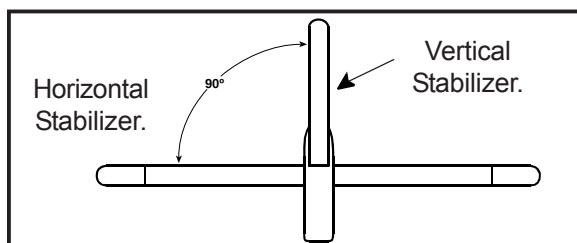
4. Remove the stabilizer. Using a modeling knife, remove the covering from below the lines you drew. Also remove the covering from the bottom edge of the stabilizer.

 When cutting through the covering to remove it, cut with only enough pressure to only cut through the covering itself. Cutting into the balsa structure may weaken it.





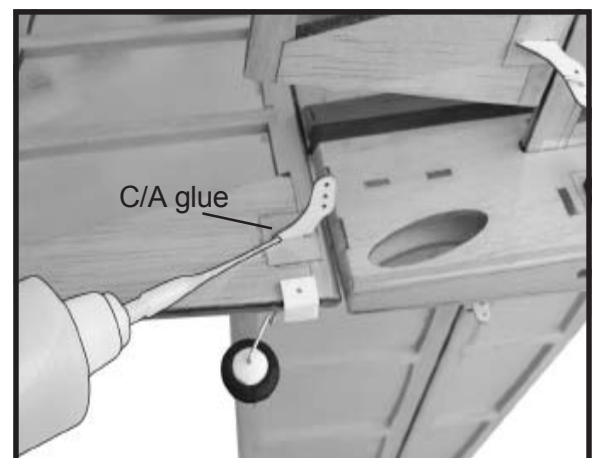
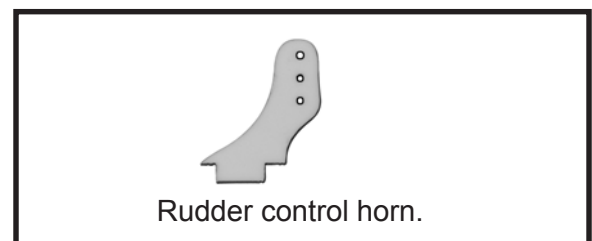
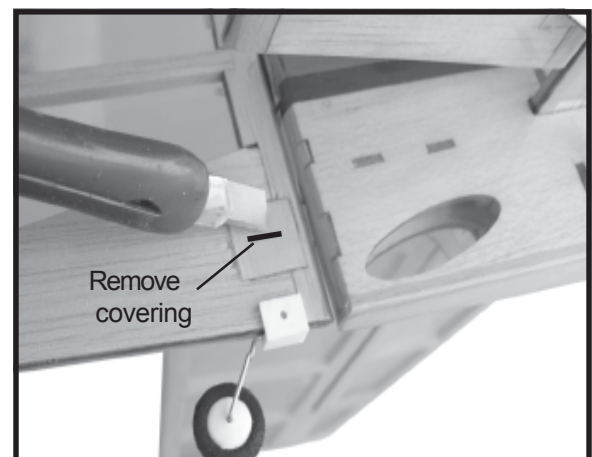
5. Slide the vertical stabilizer back in place. Using a triangle, check to ensure that the vertical stabilizer is aligned 90° to the horizontal stabilizer.



- 6) When you are sure that everything is aligned correctly, mix up a generous amount of Flash 30 Minute Epoxy. Apply a thin layer to the top and bottom of the vertical fin mounting platform sides in the fuselage. Slide the vertical fin in place and realign. Double check all of your measurements once more before the epoxy cures. Hold the vertical fin in place with T-pins or masking tape and remove any excess epoxy using a paper towel and rubbing alcohol.

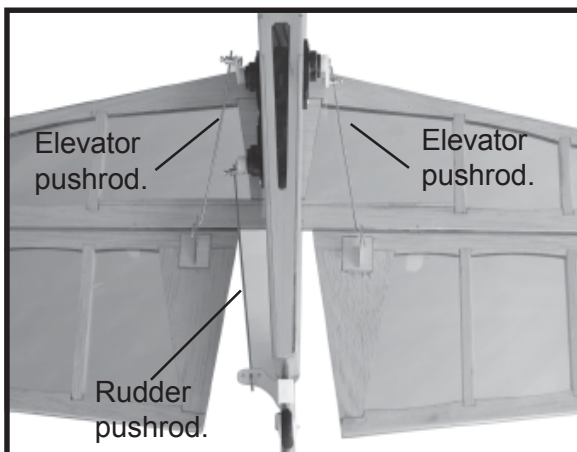
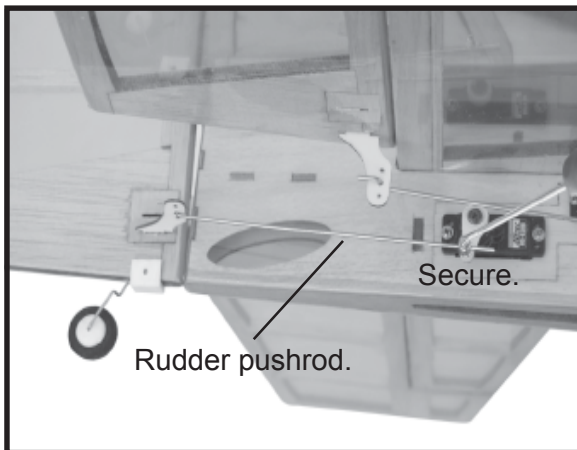
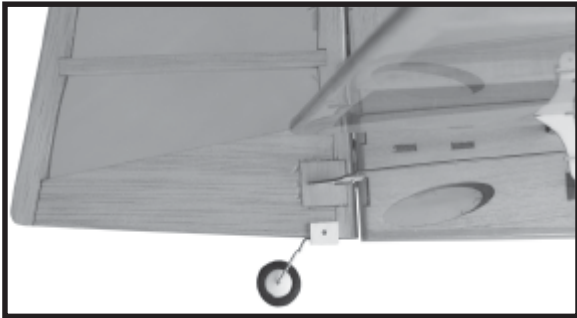
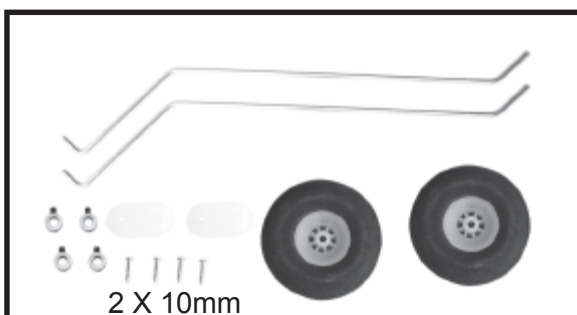
CONTROL HORN INSTALLATION.

Install the control horns as same as method of aileron wing. See pictures below:



PUSHROD INSTALLATION.

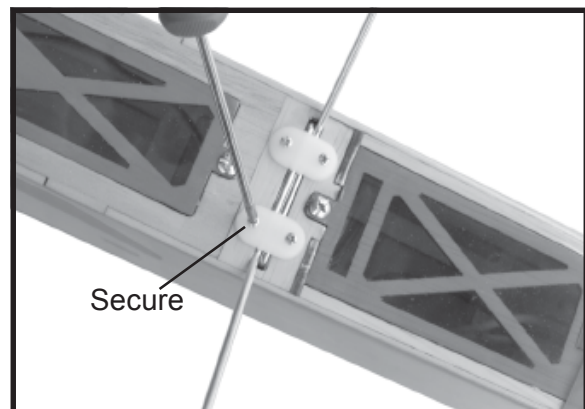
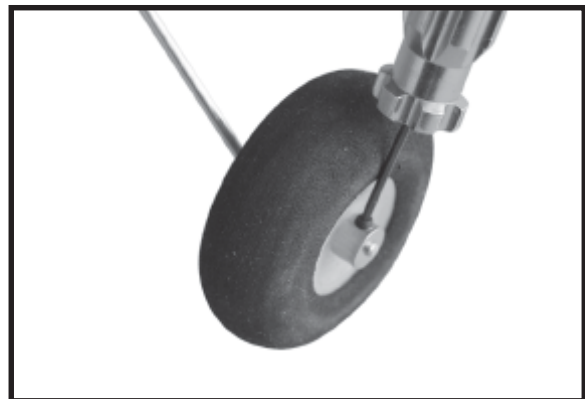
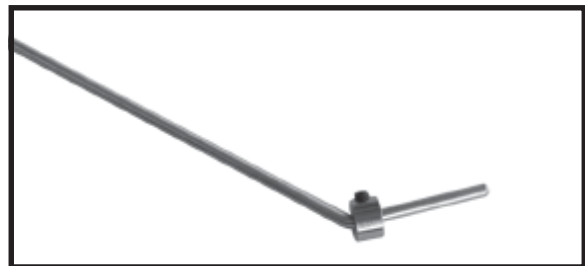
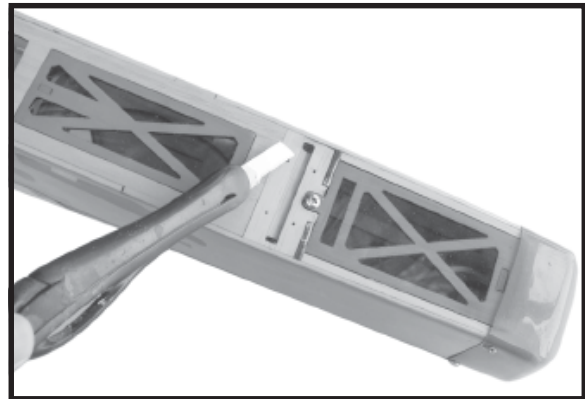
Pushrod install as same as method of aileron wing. See pictures below:

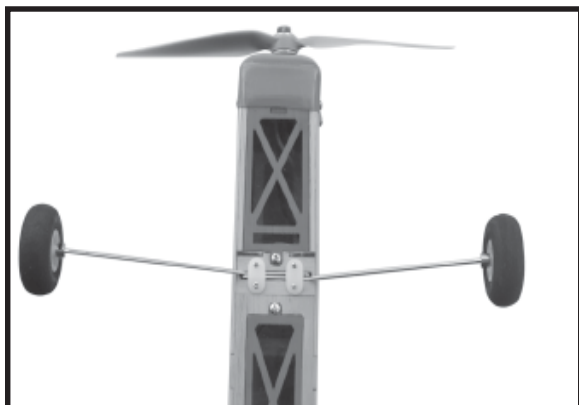
**MAIN GEAR INSTALLATION.**

□ 1) Using a modeling knife, remove the covering from over the two main gear mounting slots located in the bottom of the fuselage.

□ 2) Using the two landing gear straps as a guide, mark the locations of the four mounting screws onto the fuselage surface.

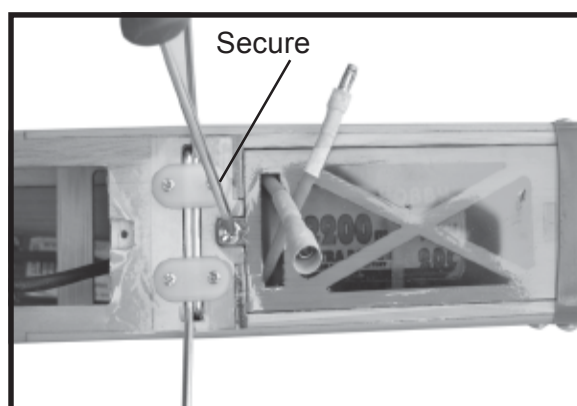
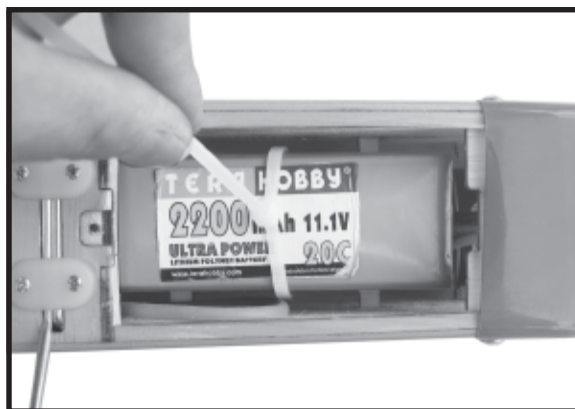
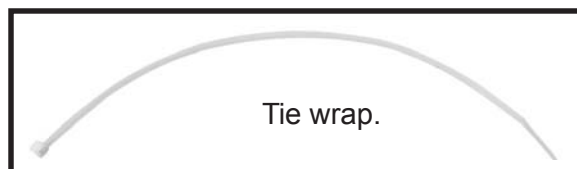
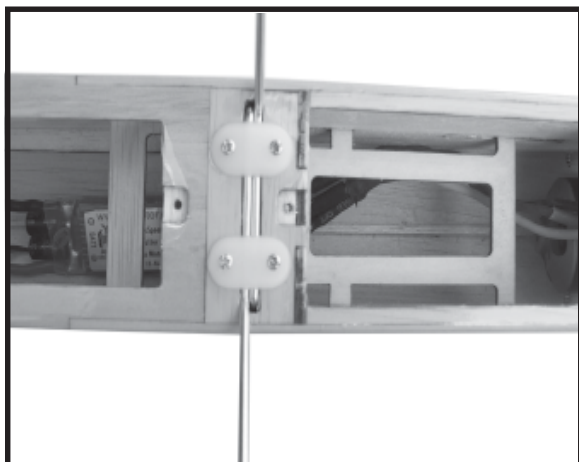
□ 3) The landing gear wire is held in place using two nylon landing gear straps and four wood screws.





INSTALLING THE RECEIVER AND BATTERY.

- ☐ 1) Plug the servo leads and the switch lead into the receiver. You may want to plug an aileron extension into the receiver to make plugging in the aileron servo lead easier when you are installing the wing. Plug the battery pack lead into the switch.
- ☐ 2) Wrap the receiver and battery pack in the protective foam to protect them from vibration. Use a rubber band or masking tape to hold the foam in place.
- ☐ 3) Do not permanently secure the receiver and battery until after balancing the model.
- ☐ 4) Using a 2mm drill bit, drill a hole through the side of the fuselage, near the receiver, for the antenna to exit.

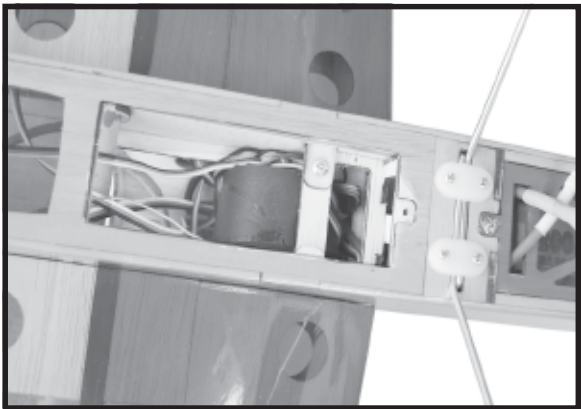
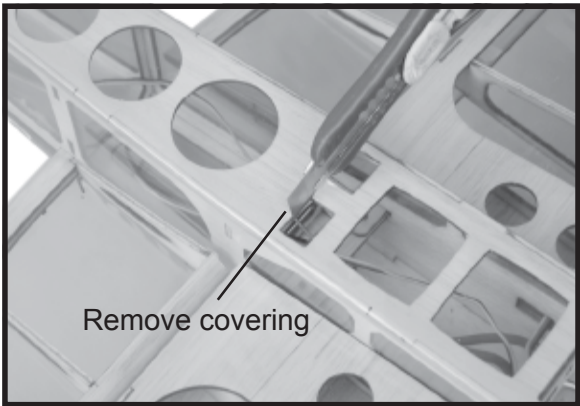
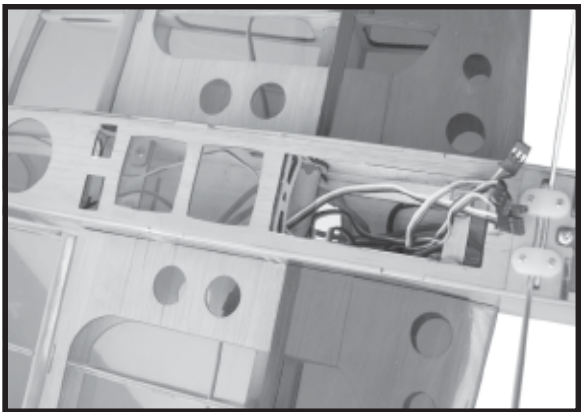
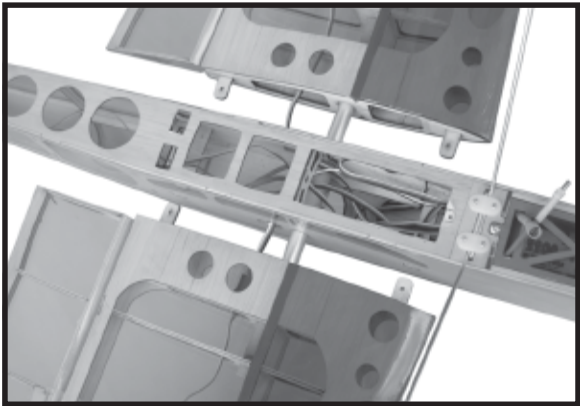
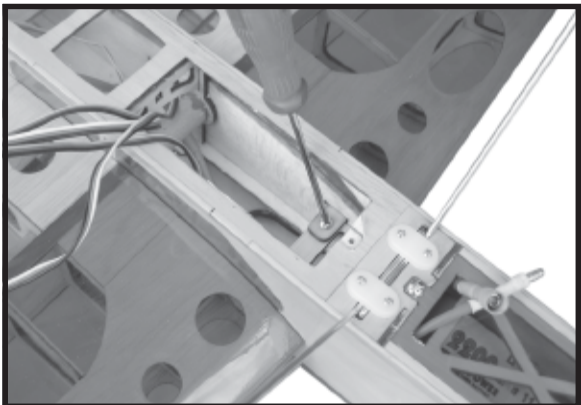
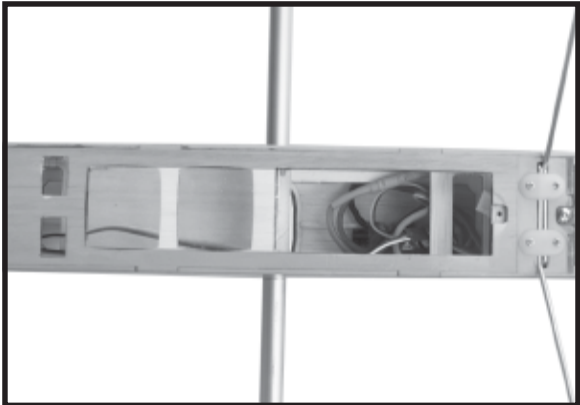
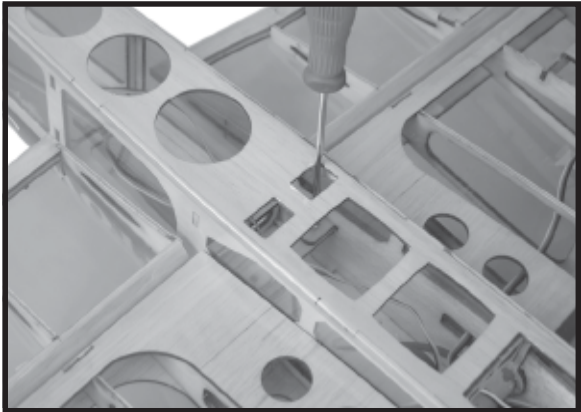
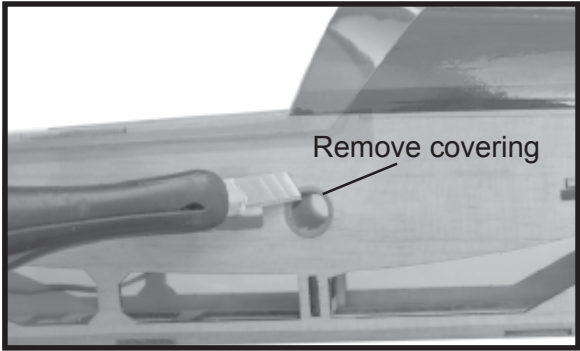


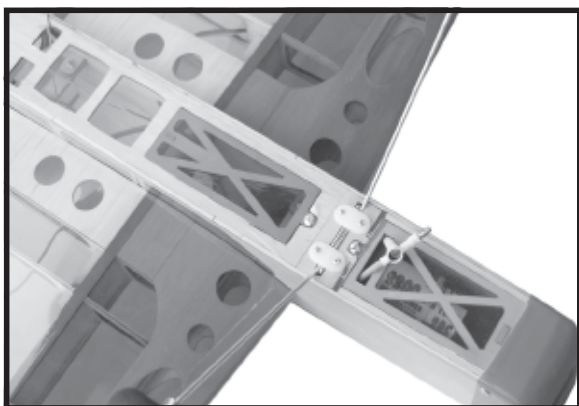
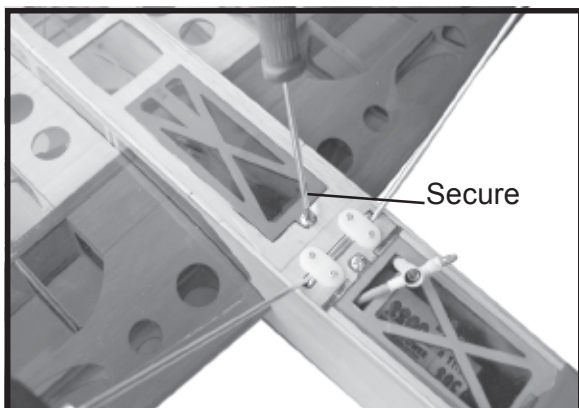
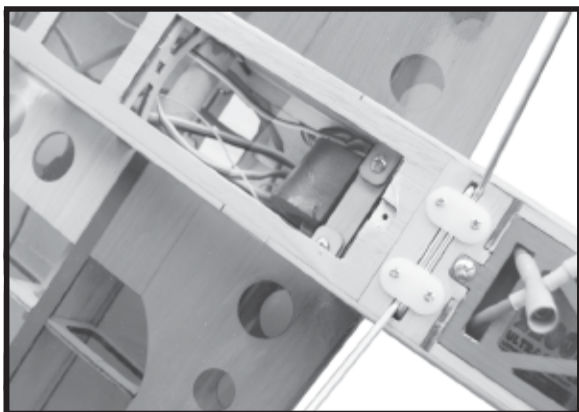
JOINING THE WING HALVES.

- ☐ 1. Locate the aluminium wing dihedral brace.



- ☐ 2. Test fit the dihedral brace into each wing half. The brace should slide in easily.





BALANCING.

❑ 1) It is critical that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash.

THE CENTER OF GRAVITY IS LOCATED 95MM BACK FROM THE LEADING EDGE OF THE WING.

❑ 2) Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the top side of the wing 95mm back from the leading edge, at the fuselage sides.

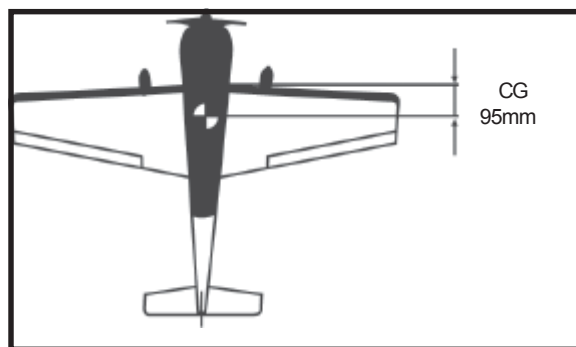
❑ 3. Turn the airplane up side down. Place your fingers on the masking tape and carefully lift the plane .

Accurately mark the balance point on the top of the wing on both sides of the fuselage. The balance point is located 95mm back from the leading edge. This is the balance point at which your model should balance for your first flights. Later, you may wish to experiment by shifting the balance up to 10mm forward or back to change the flying characteristics. Moving the balance forward may improve the smoothness and arrow- like tracking, but it may then require more speed for take off and make it more difficult to slow down for landing. Moving the balance aft makes the model more agile with a lighter and snappier "feel". In any case, please start at the location we recommend .

With the wing attached to the fuselage, all parts of the model installed (ready to fly), and empty fuel tanks, hold the model at the marked balance point with the stabilizer level.

Lift the model. If the tail drops when you lift, the model is "tail heavy" and you must add weight* to the nose. If the nose drops, it is "nose heavy" and you must add weight* to the tail to balance.

*If possible, first attempt to balance the model by changing the position of the receiver battery and receiver. If you are unable to obtain good balance by doing so, then it will be necessary to add weight to the nose or tail to achieve the proper balance point.



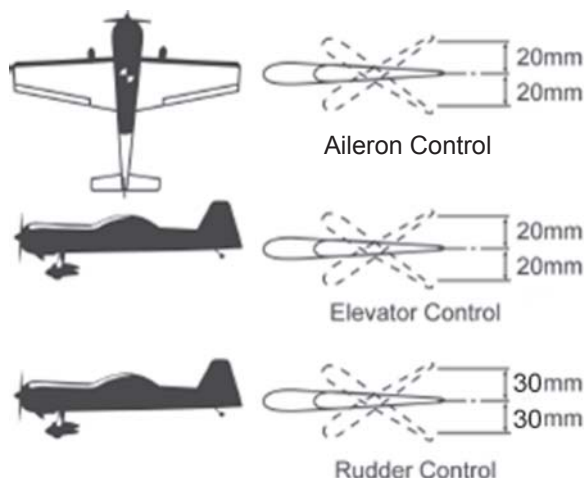
CONTROL THROWS.

- ☐ 1) We highly recommend setting up a plane using the control throws listed.
- ☐ 2) The control throws should be measured at the widest point of each control surface.
- ☐ 3) Check to be sure the control surfaces move in the correct directions.

Ailerons : 20mm up 20mm down.

Elevator : 20mm up 20mm down.

Rudder : 30mm right 30mm left.



PRE-FLIGHT CHECK.

- ☐ 1) Completely charge your transmitter and receiver batteries before your first day of flying.
- ☐ 2) Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.
- ☐ 3) Double check the balance of the airplane.
- ☐ 4) Check the control surface.
- ☐ 5) Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.
- ☐ 6) Properly balance the propeller.

We wish you enjoy.